BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC

In the Matter of	)	
	)	
Eligible Services List for	)	
Schools and Libraries Universal Service	)	CC Docket No. 02-6
Support Mechanism	)	
	)	

REPLY COMMENTS OF
INTERNATIONAL BUSINESS MACHINES CORPORATION

I. Virtual Private Networks and Proxy Servers

IBM supports the comments submitted by Funds for Learning, LLC (FFL) and

others regarding the inclusion of virtual private networks (VPN) and proxy

servers.[1] The Eligible Services List should recognize sound security practices

and solutions in the face of the current threat environment for networks as

articulated by the US Department of Homeland Security. Education and

library servers and networks are susceptible to attack, primarily because of

the open nature of education and library services to their students and the

public. The risk is high, not only because of the privacy issues surrounding

information on education networks, but also because attackers frequently

use compromised educational servers and networks as launching points for

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[1] Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6,
Comments of Funds For Learning, LLC, pp 3-5 (filed August 23, 2004); School and Libraries
Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of On-Tech
Consulting, Inc, pp 8, 11* (filed August 23, 2004)

attacks on more lucrative targets. We strongly advocate the FCC taking a more proactive approach to the Eligible Services List by focusing on cost effective and consistent functionality rather than attempting to codify individual technologies or technology implementations.

Additionally, in some cases both VPN and proxy servers can provide significant cost saving over alternative technologies or approaches. Leveraging existing Internet connections, a VPN can provide an inexpensive alternative to traditional dedicated wide-area network connections. Proxy servers can be the most cost effective way to connect an applicant's network to the Internet if the existing IP addressing scheme within the applicant's network is not compatible with Internet addressing.

II. Caching Devices

Caching is a commonly used approach to manage bandwidth and the transfer of information in a cost effective manner. As FFL noted, "Caching devices have a direct relationship to the cost-effective use of E-rate discounts..."[2] We concur with responders who assert that eligibility of caching servers and devices will reduce the amount of funds necessary to support recurring telecommunications and Internet access services by

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[2] Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of Funds For Learning, LLC, pg 4* (filed August 23, 2004)

providing more effective, efficient utilization of existing bandwidth thus minimizing future upgrade requirements.

III. Dark Fiber

A cornerstone requirement of the E-rate program is technology neutrality. Based on that point alone, dark fiber should be eligible for E-rate program support if it is the most cost-effective means to provide connectivity. Although the FCC has not ruled on dark fiber as a telecommunication service, that should not prevent the FCC from making dark fiber services eligible under Internet access, since there is no requirement that internet services be provided by an Eligible Telecommunication Provider.

IBM concurs with the comments submitted previously by many individuals and groups concerning dark fiber as an eligible service.[3] The State E-rate Coordinator's Alliance (SECA), in its response to the Third Report and Order asked the question "Why can't an applicant who has the knowledge and expertise to "light" and implement the dark fiber be allowed to do so

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[3] Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of FiberTech Networks, LLC* (filed August 23, 2004); Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of Mr. Steven J. Smith, Sr.* (filed August 23, 2004); Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of Mr. John Poland*, Director of Research and Development, Monroe 1 BOCES (filed August 23, 2004); Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of Mr. Mat Dziuba, Erie 1 BOCES* (filed August 23, 2004); Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of Mr. Robert Cooper, Independent Consultant* (filed August 23, 2004)

directly?"[4] Failing to recognize dark fiber as an eligible service is a direct

contradiction of program rules that require applicants to seek the most cost-

effective solution. The current Eligible Services List prevents applicants from

using a solution that can be extremely cost effective, providing a savings to

themselves and the program.

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[4] Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Comments of the State E-rate Coordinator's Alliance (SECA), line 462-463* (filed March 11, 2004)